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GROUND FAULT MONITOR FOR AC CURRENT UNGROUNDED SYSTEMS

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DESCRIPTION

The FACV equipment is a ground fault monitor for AC current ungrounded installations. It detects ground fault, including symmetrical faults and can be used for single and three phase systems.

It also has an LCD screen to monitor the isolation level continuously.

The FAVC range has the following models:

- FACV-230: 0 ... 230 VAC systems
- FACV-440: 0 ... 440 VAC systems
- FACV-750: 0 ... 750 VAC systems

The actuation level is user adjustable between 5KΩ and 150KΩ.
The auxiliary voltage is reference selectable: 120...370 VDC y 85...264 VAC.

APPLICATIONS

- AC current ungrounded installations: 230, 440 y 750 VAC.
- Systems with power conversion components, such as rectifiers and inverters.
- AC fault detection on inverter systems.

INSTALLED EQUIPMENT

Photovoltaic

PROAT is the supplier of leading photo-voltaic systems domestic and international: Spain, Italy, France, Czech Republic, Poland, Mauritius and Canada.
PROAT supplies to major inverter manufacturers such as Xantrex, SMA, Gamesa and Siliken and others.

Railway

PROAT is railway infrastructure provider for ADIF Spain, Barcelona Metro, Euskotren, Ferrocarriles de la Generalitat, Valencia Metro.

KEY FEATURES

- Detects symmetrical faults
- Connects an output relay switched instantaneously when a fault is detected.
- The output contact is potential free.
- Different switching outputs types available.
- Auto re-connection time user selectable (1-60 min.).
- Actuation level user selectable digitally.
- Wide supply voltage range.
- LCD display with continuously fault values measurement.
- Front buttons: Test button to simulate a ground fault and a Reset button to disconnect LEDs and output relays.
- Front lights: has three LEDs which store the fault produced by (+) and / or (-) lines and power.
- Protection fuse.
- Terminals faceplate.
- Plastic housing for DIN rail installation.

MORE INFORMATION:
+ 34 93 579 06 10 comercial@proat.es

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SOLUTIONS

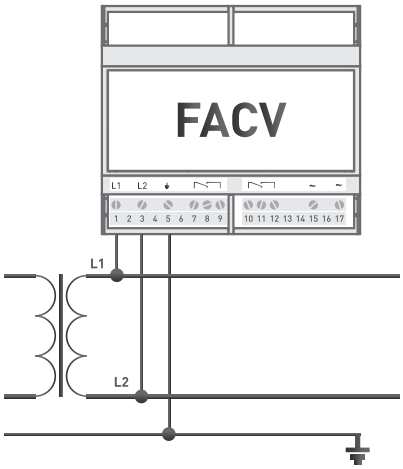
Industry

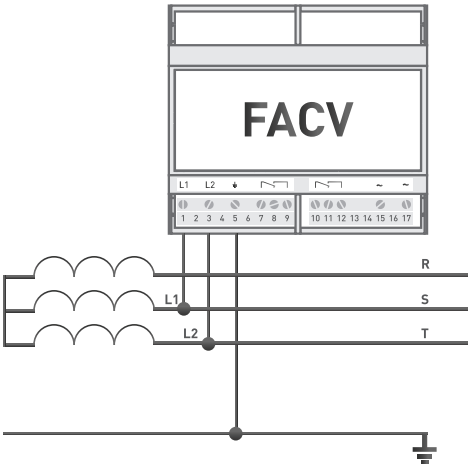
The FACV equipment can be used to monitoring any ungrounded AC installation, such as industrial plants, railways, elevators, automatic solutions, power stations, mobile generators, light fixtures, etc.

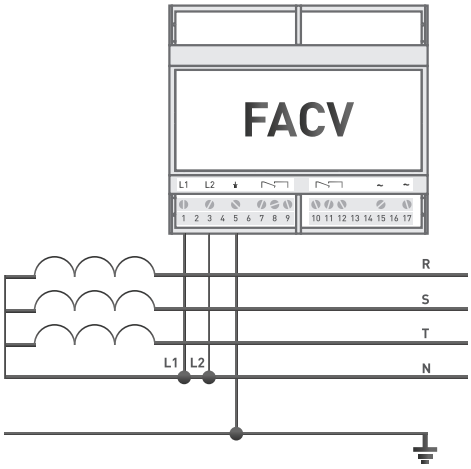
Photovoltaic and Wind Power

In electrical installations the FACV equipment detects ground faults in the isolated system after the inverter.

WIRING DIAGRAMS







CERTIFICATIONS

CE

TWO YEARS WARRANTY
2

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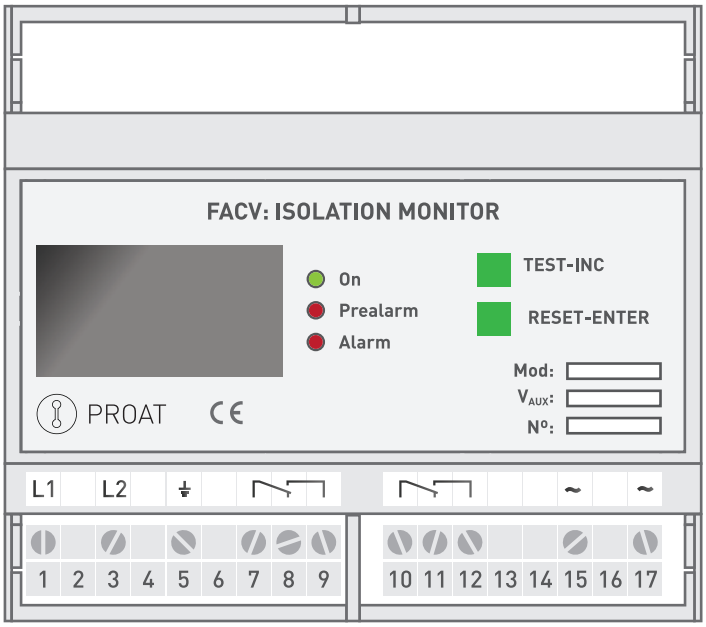
FRONT VIEW AND WIRING



A. "Power" led
B. "Pre-Alarm" Led
C. "Alarm" Led

D. Key for Test
E. Key for Reset

1. L1 - Monitoring voltage
3. L2 - Monitoring voltage
5. Ground

7. Alarm switch 1 - Mid position
8. Alarm switch 1 - NC
9. Alarm switch 1 - NO

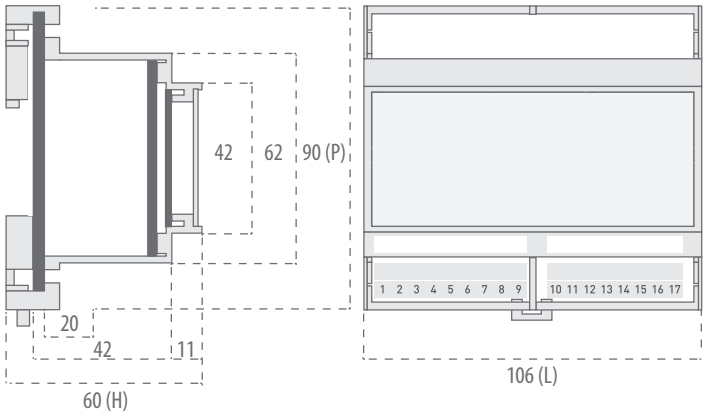
10. Alarm switch 2 - Mid position
11. Alarm switch 2 - NC
12. Alarm switch 2 - NO

15. Auxiliary voltage - L1
17. Auxiliary voltage - L2z

BOXING

- Mounting box in OMEGA DIN EN 50022.
- Self-extinguishing plastic VO class.

Reference	Box Dimensions
FACV-230	H: 60mm, L: 106mm, P: 90mm
FACV-440	H: 60mm, L: 106mm, P: 90mm
FACV-750	H: 60mm, L: 159mm, P: 90mm



MAINTENANCE

Every six months or during the regular checkups is recommended to press TEST key to verify that the equipment works properly.

REFERENCE SELECTOR TABLE

Reference	Monitored Voltage
FACV-230	0 ... 230 VAC
FACV-440	0 ... 440 VAC
FACV-750	0 ... 750 VAC

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TECHNICAL DATA

Dielectric Tests	
VDC input against auxiliary voltage	3k VDC
VDC input against switching elements	3k VDC
Auxiliary voltage against switching elements	3k VDC

Voltage Ranges	
Monitoring voltage U_N	0 ... U_N
Auxiliary voltage V_{AUX}	85 ... 265 VAC y 120 ... 370 VDC
Frequency range V_{AUX}	47...63 Hz
Power consumption	≤20 VA

Response Values	
Response value I_N	1 ... 1000 kΩ
Measurement error (I_N)	±5%
Response time T_R	<100 ms
Switching time RL1 (pre-alarm)	10 ... 30 seg.
Switching time RL2 (alarm)	1 ... 10 seg.
Re-connection time T_{RR}	no aplicable
Selectable pre-alarma values	50 ... 150 kΩ
Selectable alarma values	5 ... 45 kΩ

Measurement circuit	
Internal resistance R_I	68 ... 200 kΩ
Máx monitoring voltage U_N	U_N+10%
Permissible system leakage capacitance	not affected
Measurement type	tensión ±12 VDC

Frontal View	
Signal type	3 leds
V_{AUX}	green led
Pre-alarm	red led
Alarm	red led
Test button	Yes
Reset button	Yes
Information displayed	continuously
Display	LCD 2x8 chr.

Switching Elements	
Number of switching elements	2 elements
Type of outputs	commuted
Voltage outputs	voltage free
Rated contact voltage	250 VAC/300 VDC
Making capacity	5A
Electrical service life, number of cycles	20.000.000
Breaking capacity	2A - AC239 V 0.4-0.2 A - DC220 V

General Data	
Operating mode	continuously
Mounting	DIN rail
Connection	screw M2,5
Maximum torque	0,4 Nm
Protection grade	IP20
Flammability class	UL94V-0
Weight	310 g. aprox.
Operation temperature	-5ºC ... +55ºC
Storage temperature	-20ºC ... +80ºC
Relative humidity (without condensation)	<95%
Setting values method	front opening

Ruling	
Emissions EMC	EN50081
Interferences inmunity EMC	EN50082-1
Low Voltage	BT standard

Factory Settings	
Are-alarma value	100 KΩ
Alarma value	10 KΩ
RL1 Action time (pre-alarma)	10 seg.
RL2 Action time (alarma)	5 seg.
Fault memorization	YES

MORE INFORMATION:
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